

REMARKS

Claims 1, 2 and 5-10 are now in the application. Claim 1 has been amended to recite that "the content of the acetyl acetone being 0.008 to 0.1 parts by weight". Basis for this amendment can be found in the specific Examples in the specification. Claims 1 and 2 have been amended to recite "at least alkaline earth metal" for purposes of clarification and not to limit their scope. Newly presented claims 11 and 12 found support at page 9, lines 18 and 19 of the specification. The amendments to the claims and newly presented claims do not introduce any new matter.

The rejection of Claims 1-2 and 7-10 under 35 USC 112, second paragraph has been addressed by the amendments to claims 1 and 2.

Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,387,516 to Shichiri et al. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,387,516 to Shichiri et al. and further in view of Applicants admission. The cited references do not anticipate and do not render obvious the present invention.

In the prior art, when an interlayer film for a laminated glass is used in a heat ray reflecting laminated glass and the like, there was a problem that the remaining alkali metal in the interlayer film for the laminated glass reacts with a metal coating layer to produce a colored spot in the metal coating on the glass surface. The present inventors found that the formation of a colored spot in the metal coating on a glass surface can be effectively inhibited in an interlayer film for a laminated glass when the amount of the remaining alkali metal becomes a trace quantity, such as employed in the present invention. However, when the remaining alkali metal is reduced to such a trace quantity, a problem arose that the adhesion between the interlayer film for a laminated glass and the glass plate is abnormally enhanced and the penetration resistance of the laminated glass employing the interlayer is low. The present inventors, after significant investigation, have found that by using acetyl acetone as an adhesion control agent in combination with an alkali metal and an alkaline earth metal, such as magnesium,

and specifying the contents of these components within a given range, a laminated glass simultaneously having the ability to prevent the formation of a colored spot in a metal coating on a glass surface and adequate penetration resistance can be attained.

Important features of the invention are the contents of the alkali metal, the alkaline earth metal, and the acetyl acetone.

The lower limit of the content of the alkali metal is 20 ppm and the upper limit is 120 ppm. When the content of the alkali metal is less than 20 ppm, the adhesion between the above-mentioned interlayer film for a laminated glass and the glass plate is abnormally enhanced and the penetration resistance is reduced throughout the laminated glass, and when it is more than 120 ppm, the colored spot in a metal coating on a glass surface is produced in the laminated glass.

The content of the alkaline earth metal, such as magnesium, is 15 ppm or more and less than 60 ppm. When this content is less than 15 ppm, the adhesion between the above-mentioned interlayer film for a laminated glass and the glass plate is abnormally enhanced and the penetration resistance is reduced throughout the laminated glass, notwithstanding using in combination the alkali metal in an amount that does not produce the colored spot in a metal coating on a glass surface. Also when this content is 60 ppm or more, an effect of further improving the penetration resistance cannot be attained and this content causes the formation of a colored spot in a metal coating on a glass surface.

The lower limit of the content of acetyl acetone is 0.008 parts by weight and the upper limit is 0.1 parts by weight with respect to 100 parts by weight of the matrix resin. When this amount is less than 0.008 parts by weight, the advantageous effect of adding the acetyl acetone cannot be attained. When this amount is more than 0.1 parts by weight, the colored spot in a metal coating on a glass surface is produced in the laminated glass.

To further demonstrate the results achievable by the present invention attached is a Declaration under 37 CFR 1.132 by Mr. Tadashi Marumoto containing "Experimental Result 1"

and "Experimental Result 2". The Declaration establishes the criticality of the content of acetyl acetone and that the amount employed in Shitiri et al. fails to achieve the beneficial results according to the present invention. In particular, as shown by the results, those examples (Experimental Examples 3, 4 and 5) employing acetyl acetone in an amount of 0.008 to 0.1 parts by weight provide the excellent results according to the present invention. On the other hand, those examples (Experimental Examples 1, 2, 5 and 6 in Experimental Result 1; and Experiment Result 2) resulted in formation of a colored spot in a metal coating on a glass surface and/or undesirable pummel value.

According to the office action, Shitiri et al. disclose an interlayer for laminated glass wherein the interlayer is comprised of a resin; a sodium/potassium salt that should be present in not more than 50 ppm for sodium and not more than 100 ppm for potassium; alkaline earth metal salts, in an amount of 0.01 to 0.2 parts by weight; a plasticizer; and acetyl acetone in an amount of 0.02 to 2 parts by weight.

Although, Shitiri et al. mention acetyl acetone, it is merely described as one of the possible examples of the compound capable of forming complexes with sodium salts and potassium salts. Shitiri et al. do not disclose any preference for selecting acetyl acetone from among the numerous examples along with employing the amounts required by the present invention. Shitiri et al. disclose that the content of the compound capable of forming complexes with sodium salts and potassium salts is preferably 0.02 to 2 parts by weight per 100 parts by weight of resin. However, please see Example 28 of Shitiri et al. (the only example using acetyl acetone), wherein the amount of acetyl acetone added is 0.3 parts by weight per 100 parts by weight of resin. Using this amount of acetyl acetone does not achieve the results obtainable by the present invention. Along these lines, please the attached Declaration and especially "Experimental Result 2". Experiment 2 was to produce an interlayer for laminated glass according to Example 28 of Shitiri et al., and evaluate "Check of formation of colored spot in metal coating on glass surface" and "Measurement of pummel value". As a result, there is the formation of a colored spot in a metal coating on a glass surface and undesirable pummel value.

Originally, the purpose of Shitiri et al. was to provide an interlayer film for laminated glass which shows a much decreased extent of blushing of the peripheral region thereof even when placed in a high-humidity atmosphere. This is quite different from that of the present invention. Persons skilled in the art would not be lead by Shitiri et al. to select acetyl acetone from the many disclosed compounds capable of forming complexes with sodium salts and potassium salts, and to select the limited and narrow amount to use, and to expect the excellent results of present invention.

Shitiri et al. fail to anticipate the present invention. In particular, anticipation requires the disclosure, in a prior art reference, of each and every recitation as set forth in the claims. *See Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986), and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 USPQ2d 1241 (Fed. Cir. 1986).

There must be no difference between the claimed invention and reference disclosure for an anticipation rejection under 35 U.S.C. 102. *See Scripps Clinic and Research Foundation v. Genetech, Inc.*, 18 USPQ2d 1001 (CAFC 1991) and *Studiengesellschaft Kohle GmbH v. Dart Industries*, 220 USPQ 841 (CAFC 1984).

As discussed above, achieving the present invention form the disclosure of Shitiri et al. would be fortuitous in selecting the acetyl acetone from the myriad of possibilities disclosed therein and to also select the claimed amounts from all of the possible amounts disclosed therein.

With respect to claims 7-10, the Examiner has relied upon admissions by applicant. However, these do not overcome the above discussed deficiencies of Shitiri et al. with respect to rendering unpatentable the present invention. Accordingly, claims 7-10 are patentable for at least those reasons as to why claim 1 is patentable.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

In the event the Examiner believes another interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

Please charge any fees due with this paper to our Deposit Account No. 22-0185, under Order No. 21581-00445-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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